

REMARKS

Claims 1-10, 12-14, 17, 20, 22-29, 37, 39, and 41-48 are in the application. In this Amendment, claim 8 is changed to describe rotating at 300 rpm or higher, as discussed at 0052 in the specification, and claims 30, 35 and 49 (describing steam) are cancelled. The other claims remain unchanged. Reconsideration and withdrawal of the rejections are requested in view of the following remarks.

The specification has been amended at 0001 to update the status of the parent applications.

Turning to the prior art, the 09/30/2005 Office Action at page 3 states that Torek *et al.* does not disclose moving the liquid jet at a speed sufficient to penetrate through the boundary layer. Applicant agrees. Torek *et al.* discloses a spray process using spray nozzles. Col. 2, lines 10-21. The spray may be pulsed, i.e., turned on and off in a duty cycle. Col. 5, lines 1-22. Pulsing is described as being advantageous in using less water, increasing ozone concentration, and washing away by-products. Col. 4, lines 36-58. Regardless of the how the spray is applied, nothing in Torek *et al.* suggests a liquid jet penetrating a boundary layer, as claimed. In addition, Torek *et al.* discloses a batch process with the spray from the nozzles directed nearly parallel to the wafers. See Fig. 3. Consequently, the concept of a liquid jet, or use of jet impact, is entirely missing from Torek *et al.*

DeGendt *et al.* makes no mention of a liquid jet penetrating a boundary layer. Indeed, in DeGendt *et al.* there is no liquid boundary layer at all. The immersion process in DeGendt *et al.* (Fig. 3) of course cannot involve any liquid layer. The moist vapor process shown in Fig. 2 of DeGendt *et al.*, uses a thin condensation

layer formed via condensation, and not from a heated liquid, as claimed. See DeGendt *et al.*, column 7, lines 4-9.

As shown in Fig. 1 of EP 782 177, rinse water is supplied from a nozzle 11 on the side of the chamber. The nozzle is not directed at the workpiece, as claimed. Rather, as with Torek *et al.*, in EP 782 177 as well, the nozzle 11 sprays water parallel to the plane of the wafer. The water falls onto the wafer via gravity. There is nothing in EP 782 177 to suggest the claimed jet of liquid directed at the workpiece. Since none of Torek *et al.*, DeGendt *et al.* and EP 782 177 have any suggestion of the claimed liquid jet penetrating a boundary layer, the claims cannot be obvious over the combination of these prior art references.

Claims 3 and 4 describe jet pressures. The prior art applied against the claims does not disclose any jet, or any jet pressures.

Claim 8 describes spinning the workpiece at greater than 300 rpm, as described in the specification at 0052. Torek *et al.* discloses slow rotation, col. 2, line 20, at 100 rpm or less, col. 3, line 20, col. 8, line 47, col. 9, lines 3-7. Torek *et al.* teaches away from higher spin speeds. Col. 1, lines 59-67. DeGendt *et al.* does not spin at all. EP 782 177 spins to distribute rinse water, but no spin speeds are disclosed. To the extent that the 09/30/2005 Office Action contends that spin speeds of greater than 300 rpm are obvious over EP 782 177, such contention conflicts with the express statements in Torek *et al.* that spin should be limited to 100 rpm maximum (consequently also teaching away from combining EP 782 177 with Torek *et al.*).

Claims 13 and 17 describe moving the jet. The nozzles in both Torek *et al.* and in EP 782 177 are fixed in place, and the workpiece is not facing the nozzle. Claim 14 describes the jet as substantially perpendicular to the workpiece. In both Torek *et al.* and in EP 782 177, the liquid is directed parallel to the workpiece. The third reference, DeGendt *et al.*, does not disclose spraying or spinning the workpiece.

In view of the foregoing, it is submitted that the claims are in condition for allowance, and a Notice of Allowance is requested.

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